

Serial No. 09/990,964

LISTING OF CLAIMS:

Please reconsider the claims as follows:

1. (currently amended) [An]Apparatus adapted for use in an optical communication system, comprising:

[a transmitter, including:

a means for modulating an optical carrier in a sequence of return-to-zero (RZ) pulses;]

a modulator, for modulating an optical phase of [said ]pulses within a sequence of return-to-zero (RZ) pulses in accordance with an input digital data stream to form an optical phase modulated signal in which each pulse in the sequence of RZ pulses has associated with it a phase that is different than a phase of pulses temporally adjacent to it; and

a means for applying the optical phase modulated signal to a dispersion managed optical transmission medium [link;

a dispersion managed optical transmission medium; and

a receiver of the optical phase modulated signal].

2. (cancelled)

3. (canceled)

4. (currently amended) The invention defined in claim [2]1 wherein said modulator is a phase shift keying (PSK) modulator.

5. (currently amended) The invention defined in claim [2]1 wherein said modulator is an optical differential phase shift keying (ODPSK) modulator.

6. (currently amended) The invention defined in claim [2]1 wherein said modulator is an optical quadrature phase shift keying (OQPSK) modulator.

Serial No. 09/990,964

7. (previously presented) The invention defined in claim 1 wherein said medium is a long haul transmission medium adapted for transmitting solitons.

8. (previously presented) The invention defined in claim 1 wherein said medium is adapted for transmitting pulses that disperse as they propagate along the medium.

9. (currently amended) The invention defined in claim 1 wherein said [transmitter]apparatus further includes a wavelength division multiplexer adapted to combine an output signal of said modulator with other optical phase modulated signals having optical carriers with different wavelengths.

10. (currently amended) The invention defined in claim [2]1 wherein said modulator is a LiNbO<sub>3</sub> phase modulator.

11. (currently amended) The invention defined in claim [2]1 wherein said modulator is a LiNbO<sub>3</sub> Mach-Zehnder phase modulator.

12. (currently amended) The invention defined in claim 1 wherein said apparatus further comprises a receiver including[es] a delay demodulator for receiving the optical phase modulated signal from the dispersion managed optical transmission medium.

13. (currently amended) The invention defined in claim 1 wherein said apparatus further comprises a receiver including[es] a balanced receiver for recovering said input data from the phase modulated signal.

14. (canceled)

Serial No. 09/990,964

15. (previously presented) The invention defined in claim 1 wherein said transmission medium includes discrete or distributed means of erbium-doped fiber amplification (EDFA) or Raman amplification.

16. (currently amended) A method of optical communications, comprising the steps of:

modulating an optical carrier signal in a sequence of return-to-zero (RZ) pulses;

modulating an optical phase of said pulses in accordance with an input digital data stream to form an optical phase modulated signal in which each pulse in the sequence of RZ pulses has associated with it a phase that is different than a phase of pulses temporally adjacent to it; and

applying said optical phase modulated signal to a dispersion managed optical transmission medium[link; and

transmitting said signal to a designated receiver via a dispersion managed optical transmission medium].

17-18. (canceled)